

March 17, 1994

**GMP #43**

**MEMORANDUM**

TO: District Directors  
Environmental Health Managers  
Environmental Health Supervisors  
Environmental Health Specialists

THROUGH: Robert W. Hicks, Director  
Office of Environmental Health Services

FROM: Donald J. Alexander, Director  
Division of Onsite Sewage and Water Services

SUBJECT: Procedure for Applying for An Experimental Permit Under  
Section 2.25 of the Sewage Handling and Disposal Regulations  
**Onsite - Procedures - Experimental Program**

**Experimental System Policy**

It is the policy of the Division of Onsite Sewage and Water Services to encourage the development of new methods, processes, and equipment which appear to have application for the treatment and disposal of sewage.

**Definition of An Experimental System/Technology**

Section 2.25.A of the Sewage Handling and Disposal Regulations defines an experimental method, process, or equipment to be:

- (i) any technology not covered by criteria in Part IV, and which
- (ii) in principle and/or application is new or unconventional.

## Experimental Application

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Before any new technology can be incorporated into Virginia's regulations, the technology must be thoroughly tested in a full scale or representative pilot system utilizing the experimental process. Applying for an experimental permit is the first step in the review and testing process.

## Categories of Applicants

There are typically three categories of applicants who would be interested in obtaining an experimental permit. They are:

1. A company who is interested in demonstrating the operational competency of a proprietary product or technology in order for the product or technology to receive statewide approval and incorporation into the regulations.
2. An individual who is interested in using a proprietary product or technology, or a non-proprietary design, in order for the product, technology, or design to receive statewide approval and incorporation into the regulations.
3. An individual who is interested in using a proprietary product or technology, or a non-proprietary design with no intention of seeking statewide approval and incorporation into the regulations.

## The Application Process

1. *All applications must be made to the Division of Onsite Sewage and Water Services through the district or local health department.*
2. An application form has been prepared to assist the applicant in clarifying what he is trying to accomplish, and to outline his responsibilities. Attached is a copy of the application. ***This application form should be used if the applicant is seeking a permit for an experimental system.*** The processing of the application will be greatly enhanced if detailed information is provided by the applicant when he fills out the form. ***An incomplete application will be returned.***

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### **Submission of Formal Plans and Specifications**

Formal plans and specifications are required. These plans are to be submitted by the applicant, or the applicant's engineer, to the district or local health department for review. Follow the review process as outlined in GMP #17 with respect to the local and district review of the plans. The district office should then forward the plans and specifications, with comments, along with the complete application package, to the Division of Onsite Sewage and Water Services. Include in the cover letter any background information of which the Division should be made aware.

The Division will review the plans and specifications in a manner consistent with the procedure outlined GMP #17. The Division will review the plans and specifications based on standard engineering principles.

### **Creation of a Monitoring Program**

A monitoring program will be developed by the Division for all experimental systems. Information provided in the application will assist the Division in developing the monitoring program. The regulations require the monitoring program to be conducted under the direction of a licensed professional engineer experienced with the field of sanitary engineering, or by a testing firm acceptable to the Division. The Division will work closely with the person or testing firm identified in the application to develop a monitoring program which will determine the performance of the system being studied. In most cases, performance reports will be submitted to the local health department and the Division.

### **Issuance of a Construction Permit**

After review of the plans (and revisions if necessary), and the development and approval of the monitoring program, **and**, when the Division is reasonably satisfied that the experimental method will provide satisfactory sewage treatment and disposal, the district environmental health manager is responsible for drafting the construction permit outlining all applicable conditions. The Division will provide assistance in drafting the construction permit. The permit must be forwarded to the Division for review and to be counter-signed. It will be returned to the district environmental health manager for delivery to the applicant.

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### **Onsite Inspections**

Upon completion of the installation of the system, the local health department must review the installation of the conventional components of the system as listed in Part IV of the Sewage Handling and Disposal Regulations. The consulting engineer is responsible for reviewing the installation of the experimental aspects of the system. Following his review, the engineer is required to certify that the system was installed substantially in accordance with the plans and specifications, or in the case of a proprietary system, in accordance with the manufacturer's requirements.

### **Issuance of an Experimental Operation Permit**

Upon completion of the installation of the system, and certification by the design engineer stating that the system was installed substantially in accordance with the approved plans and specifications, revised only in accordance with the provisions of Section 2.19 of the Sewage Handling and Disposal Regulations, the district environmental health manager should issue an experimental operation permit. The permit shall show an expiration date which has been determined based on the length of the study as provided in the monitoring program. A copy of the operation permit must be sent to the Division.

### **Issuance of an Operation Permit**

The commissioner shall issue an operation permit upon expiration of the experimental permit, and satisfactory completion of the monitoring program if, on the basis of testing, the Division finds that the experimental system provides satisfactory sewage disposal. If these conditions are not met, then the commissioner shall issue an order which will require the owner to alter the sewage disposal system in a manner that will enable the conditions to be met.

# Application for a Special Permit for Experimental Methods, Processes, and Equipment

**Experimental System Policy:** It is the policy of the Division of Onsite Sewage and Water Services to encourage the development of new methods, processes, and equipment which appear to have application for the treatment and disposal of sewage. However, before any new technology can be incorporated into Virginia's regulations, the new developments must be thoroughly tested in a full scale or representative pilot system utilizing the experimental process. Applying for an experimental permit is the first step in the review and testing process.

**The application process:** Section 2.25 of the Sewage Handling and Disposal Regulations outlines the procedures and steps which must be followed when an application is being made for a sewage treatment and disposal method(s), process(s), and/ or use of equipment which:

- (i) is not covered by criteria in Part IV of the regulations, and which
- (ii) in principle and/or application is new or unconventional.

*All applications must be made to the Division of Onsite Sewage and Water Services through the district or local health department.* While the applicant is free to develop or use any method to present and describe the experimental procedure, the following format is provided to assist the applicant when he applies for an experimental permit. If you use this form, please fill it out as completely as possible.

Name of Applicant: \_\_\_\_\_

Address: \_\_\_\_\_

Phone number of applicant: \_\_\_\_\_

County where the experimental process will be located: \_\_\_\_\_

Address of the experimental site: \_\_\_\_\_

Brand name (if any) of the proposed technology: \_\_\_\_\_

Briefly describe the proposed technology: \_\_\_\_\_

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**Please fill out this form as completely as possible. The processing of your application will be greatly enhanced, if detailed information is provided.**

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A sampling and data analysis monitoring program must be established by the Division of Onsite Sewage and Water Services to determine how well the process is working. In order to establish this monitoring program, it is necessary to know what you are trying to demonstrate. To assist the Division in establishing a sampling and data analysis monitoring program, please completely answer the following:

1. What are the goals and objectives of the experimental installation, i.e., what are you trying to demonstrate or show:

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2. Please describe the conditions and/or restrictions present at the experimental site which you believe your experimental process will overcome, i.e., a high water table, impermeable soils, rock, etc. (attach supporting documentation, i.e., soils work):

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3. Please describe how your experimental process will overcome the site conditions or would otherwise be expected to work:

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At the termination of the study, the Division will evaluate the data to determine if the experimental process has provided satisfactory ground water protection, wastewater treatment, and disposal. This determination will be based on the review of operation reports, sampling data, and field observations. To assist the Division in understanding how to review the data, please completely answer the following:

1. Identify the minimum performance results which *you, the applicant*, feel would be necessary for the experimental process to be considered successful:

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2. What time period, in months, will it take to demonstrate the performance of the process. This time period can range from 18 to 36 months. Describe why the specified time period will adequately demonstrate the long term performance of the system:

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The Sewage Handling and Disposal Regulations have specific testing and evaluating requirements which must be followed during the period of the study. Please describe how you will comply with the following requirements.

1. All procedures used in validating the process must be conducted under the

supervision of a licensed professional engineer experienced in the field of sanitary engineering, or by a testing firm acceptable to the Division. Please describe who will be in charge of the study.

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2. All testing of the sewage treatment and disposal process must be performed under maximum design conditions and over extended periods of time in the geographical area of the proposed installation. Please describe how you will control the hydraulic and/or organic loading rate to the system so that it is used to design capacity:

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3. The technology being tested must be either a full scale system, or a representative pilot installation, and the wastewater being treated or conveyed must be representative of the type of sewage relevant to the process being studied. Please describe the scale of the demonstration and the characteristics of the sewage:

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4. Influent (and effluent, if appropriate) flow measuring equipment must be provided, and total flows must be recorded daily. Please describe how you will measure how much water is being treated and/or disposed:

[illegible]

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5. All analysis shall be made in accordance with the current edition of Standard Methods for the Examination of Water and Wastewater, or by analytical methods approved by the Division. Please describe what samples are to be collected and your method of sampling and analysis:

[illegible]

6. Detailed plans must be submitted showing how, in the case of noncompliance (i.e., failure of the experimental system to perform properly), the experimental process will be converted to or replaced with a proven system. A bond may also be required. Check all that apply:

\_\_\_\_\_ An application for a NPDES permit is attached.

\_\_\_\_\_ A valid construction permit for a Type I, II, or III system is attached.

\_\_\_\_\_ The owner certifies as to the availability of an existing sewer or treatment works.

\_\_\_\_\_ Bonding has been provided.

**At the termination of the study:**

At the termination of the study, if, on the basis of testing during the study period, the Division finds that the experimental process provides satisfactory sewage disposal, the commissioner shall issue an operation permit. ***If these conditions are not met, the commissioner shall issue an order which will require the owner to alter the sewage disposal system in a manner that will enable the conditions to be met.***

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Applicant's Signature

Date

(DDE/-expaplic)  
(rev. 3/8/94)